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ABSTRACT

This paper focuses on the use of the variable race in educational research. Researchers are clearly considered to have the right to choose their variables. But, the use of race in a nonscholarly fashion is held to be professionally inadequate and often detrimental to black Americans. For years, researchers using race to make comparison s between black and white Americans have reportedly based their findings on differences in group means, implying that racial groups are quite different. The example presented in this study uses data on the employment status, arithmetic grade level, and various measures of intelligence (the latter two presented as pre- and post-training measures) collected at the Muskegon Area Skill Training Center. It is contended that one methodology (comparison of differences between means) demonstrated that a group of white youth and a group of black youth were quite different, while a second methodology (cluster analysis) using the same data on the same youth groups showed that the white group and the black group were quite similar. Following these results, the obligations and responsibilities of researchers are considered to have added significance, especially in view of the current trend toward a divided America. (RJ)

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ABSTRACT

THE BLACK AND WHITE OF EDUCATIONAL RESEARCH

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This article focuses on the use of the variable race in educational research. Researchers clearly have the right to choose their variables; however, the use of race in a non-scholarly fashion is professionally inadequate and often detrimental to black Americans. For years researchers using race to make comparisons between black and white Americans have reported findings based on differences in group means, implying that racial groups are quite different. According to the example presented in this article, one methodology (comparison of differences between means) demonstrated that a group of white youth and a group of black youth were quite different, while a second methodology (cluster analysis) using the same data on the same youth demonstrated that the white group and black group were quite similar. Considering the currently dangerous trend toward a divided America, the obligations and responsibilities of researchers have added significance.

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THE BLACK AND WHITE OF EDUCATIONAL RESEARCH

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We live in a world today that is at best confusing. As scholars, teachers, and researchers it is understandable that our obligations are different and difficult. When dealing with variables that are not only controversial but laden with emotions, researchers today are faced with responsibilities that have social and political significance. In view of the current issues concerning black and white relations, the use of the variable of race presents a difficult problem for the researcher with regard to methodology and presentation of results.

Clearly all researchers have the right to choose their variables as long as professional ethics are not broken. There are, however, other dimensions that must be considered such as the effects that findings may have on large groups of people. Researchers, for example, who choose to use the variable of race and to investigate other areas that may affect the lives of black people or other large minority groups ought to be especially careful and precise. Investigators may have little or no control over who uses his research and for what purposes. Since results may be interpreted by many individuals and in a variety of ways, it is a difficult problem to assure the important distinction that must be made between findings and conclusions.

An historical example of the use of findings of researchers was reported by Brazziel.[1] It concerns the main argument of defense attorneys and the superintendent of public instruction

[1]William F. Brazziel, "A Letter From The South," Harvard Educational Review, Vol. 39, No. 2, Sept., 1969.

when plaintiffs brought suit in the Federal District Court to integrate the Louisiana Public Schools some 14 years ago. They argued that "white teachers could not understand the Nigra mind" and, therefore, would not be able to instruct them effectively in integrated classrooms. The defense quoted heavily from the theories of white intellectual supremacy as expounded by Henry Garrett and Audrey Shuey. More recently, according to Brazziel, defense attorneys in Virginia fought a suit in the Federal District Court to integrate Greensville and Carolina County Schools. Again their main argument was that "white teachers could not understand the Nigra mind" and that the Nigra children should be admitted to the white schools on the basis of standardized tests. The defense in this case quoted heavily from the theories of Arthur Jensen who had made headlines in Virginia regarding the inferiority of black people as measured against IQ tests just five days before the case was heard.

Whether these researchers intended for their research to be interpreted in this manner is not the issue in this article. The point here is that the use of race as a variable in this manner is unscholarly as well as having profound effects on black people. A legitimate question can, therefore, be raised concerning the use of race in a sloppy way to control for powerful variables loosely related to generally accepted racial characteristics.

A number of black leaders and scholars, including Clark[2] and Wilkins,[3] have been concerned for some time with the uncovering of certain truths that affect black Americans.

[2]Kenneth B. Clark, Dark Ghetto: Dilemmas of Social Power, (New York, New York, Harper & Row, 1965).

[3]Roy Wilkins, "Negro Educability and Good Teachers," The Detroit News, June 20, 1965, (Released by the Register and Tribune Syndicate, 1965).

Hamilton[4] states it this way:

> It is absolutely crucial to understand that society cannot continue to write reports accurately describing the failures of the educational institutions vis-a-vis black people without ultimately taking into account the impact those truths will have on black Americans.

The relevance of this is that for years researchers have used race as a major variable to make comparisons between black and white Americans, and, as we have pointed out, if race is used as a variable in research it must be used in a scholarly fashion.

One example of the problems faced by the researcher using the variable of race is pointed out by Dreger and Miller:[5]

> It is still true that sociological determination of 'race' is the primary selection procedure for samples of whites and Negroes. Most investigations identify their groups by an implicit acceptance of self-designation and community designation of individuals as 'white' or 'Negro.' It is obvious, however, both from the legal definition of Negroidness in the South and popular views, as well as, direct observation of 'Negro' groups, that Negro can be almost anyone with some trace of what someone else or the person himself regards as Negro.
>
> If 'race' is, as in most of the investigations reported here, one of the major independent variables, there is a shocking lack of precision in defining 'race.'[6]

Moreover, from a biological point of view, it is impossible to do competent research on the basis of the variable of race. Researchers in education and psychology, however, find it necessary to find ways by which the variable of race can be used for comparisons. Dreger and Miller point out:

> Investigations presuming to assess the effects of genetic differences on performance but failing to take obvious steps to identify genes (and not merely pheno-types) would be laughed out of court in any other field of genetic investigation.[7]

[4]Charles V. Hamilton, "Race and Education: A Search for Legitimacy," Harvard Educational Review, Vol. 38, No. 4, 1968, p. 671.

[5]Ralph M. Dreger and Kent S. Miller, "Comparative Psychological Studies of Negroes and Whites in the United States," Psychological Bulletin Monograph Supplement, American Psychological Association, Vol. 70, No. 3, Pt. 2, Sept., 1968.

[6]Ibid. p. 25.

[7]Ibid. p. 25.

Support for the usefulness of biographical data as predictors of significant behavioral phenomena by Sherwood and Nataupsky[8] has added a related dimension to the issue raised in this discussion. Their investigation was designed to examine whether or not the discrepant conclusions in research on racial intelligence could be predicted from biographical and demographic data about the investigator. This was not a study of racial prejudice, nor an attempt to discredit certain conclusions. It was, however, a preliminary foray into the social psychology of racial research. Seven biographical items were found to be significant predictors of categories of research conclusions.

It is not uncommon for some whites to believe that most black children are intellectually and psychologically different from white children, and that these differences result in inferior academic performances. The review of psychological studies concerning Negroes and whites by Dreger and Miller is an extraordinary example of the extent to which research, based on black and white in America supports the point of view that the black man in America is inferior. In other words, not only are black children and black adults treated as a problem from an educational and social point of view but from a research point of view as well. This means that many and various individuals are grouped under the stereotyped label "whites" while many and various other individuals are stereotyped as "Negroes." These two groups are then treated as separate entities with little or no attention given to the vast areas of overlap between the two groups on all psychological and educational variables.

The example used in this article is intended to show why the variable of race accounts for any variance in the dependent variable and why researchers should attempt to test hypotheses that explain how racial characteristics might account for some

[8]John J. Sherwood, and Mark Nataupsky, "Predicting The Conclusions of Negro-White Intelligence Research From Biographical Characteristics of the Investigator," Journal Of Personality And Social Psychology, 1968, Vol. 8, No. 1, pp. 53-58.

variance. Educational researchers ought to seek more appropriate methodology. The value of research to education at least, lies in its compatability with the goals and current trends of instruction, and its ability to improve the chances of the individual. In education, the trend is toward more individualized and unique curricula that are relevant to the needs and abilities of individuals. Research that contributes to this kind of instruction is needed.

Psychologists and educators have used two general research methodologies in order to comprehend the complexity of human behavior. The first methodology is the group (nomothetic) approach. The second methodology is the individual (idiographic) approach. Allport[9] first brought up the difference between group and individual methods of studying human beings. When we administer the same tests or ratings to all members of a group, we are using the group approach[10] to identify differences between groups of individuals so that general propositions can be adduced. Generalization is a definite advantage of the group approach, but this makes it impossible to view the individual beyond his membership in a previously identified group.[11] In contrast to this, we use the individual approach when we look for characteristics peculiar to the one person we seek to understand or describe. This approach maximizes understanding of the unique phenomenon being investigated, but it makes generalizations to an entire class of individuals very risky. Two good examples of investigations in the individual tradition would be Freud's study of personality and Piaget's investigation of mental development in children.

[9]G. W. Allport, Personality: Psychological Interpretation, (New York: Holt, Rinehart and Winston, 1937).

[10]L. E. Tyler, The Psychology of Human Differences, (New York: Appleton-Century-Crofts, 1965).

[11]M. C. Johnson, J. M. Kisch, and H. M. Shaevits, Cluster Analysis: A Partial Solution to the Nonothetic-Idiographic Controversy, unpublished manuscript, University of Michigan, Ann Arbor, Michigan, 1967.

If it is desired to understand the individual case and still be able to generalize to a group or class of events, a compromise approach must be used. It is possible to use several different kinds of analysis to answer these problems. The analysis of covariance, which controls for third variables, will answer many of the problems raised. The example used in this article should not be considered an argument for the use of cluster analysis. However, cluster analysis techniques, although relatively new, can be used to explore new relationships between such individual and group approaches to analysis.[12]

One example of new insights through cluster analysis is given by Kisch[13] as he investigated the problem of underachievement. Kisch found that psychometric research treated underachievement as if it served a single entity. After using cluster analysis, it was found that there were several different subsets (or clusters) of underachievers. In other words, there were many different "kinds" of underachievers and earlier group approaches had masked important within-group differences.

The study in this article presents exploratory research which makes use of cluster analysis to isolate subgroups within white and black populations which, as mentioned earlier, have too often been treated as homogeneous. In order to clarify this approach, it might be well to compare it to the research done by Shuey.[14] Shuey in her book on the comparison of Negro and white intelligence, reviews fifty years of research over hundreds of studies which used many thousand of white and Negro

[12]G. Ball, "Data Analysis in the Social Science," Fall Joint Part I, Washington, D.C. 1965.

[13]J. A. Kisch, A Comparative Study of Patterns of Underachievement Among Male College Students, unpublished doctoral dissertation.

[14]A. M. Shuey, The Testing of Negro Intelligence, (New York: Social Science Press, ~~1969~~ 1966).

subjects. The conclusion reached by Shuey was:

> .....the fact that differences were reported in practically all of the studies in which the cultural environment of the whites appeared to be similar in richness and complexity to that of Negroes------all taken together, inevitably point to the presence of native differences between Negroes and whites as determined by intelligence tests.

The data reported by Shuey are almost exclusively based on group research or comparison of average scores of white to average scores of Negroes on a given test. She has carried to extremes the previously explained group approach to psychological data. It is not our purpose to re-examine the data described by Shuey, but the cluster analysis approach can be used with comparable data.

TABLE I

Variables On Which The Two Groups Were Compared

Marital Status
Formal Education
Number of Dependents
Employment (before training)
Hour Rate (before training)
Skill Level (before training)
Age
Full Scale I.Q. (Wechsler) (before training)
* Altitude I.Q. (Jastak) (before training)
Verbal I.Q. (Wechsler) (before training)
Performance I.Q. (Wechsler) (before training)
Reading Grade Level (Wide Range) (before training)
Spelling Grade Level (Wide Range) (before training)
Arithmetic Grade Level (Wide Range) (before training)
Full Scale I.Q. (Wechsler) (after training)
* Altitude I.Q. (Jastak) (after training)
Verbal I.Q. (Wechsler) (after training)
Performance I.Q. (Wechsler) (after training)
Reading Grade Level (Wide Range) (after training)
Spelling Grade Level (Wide Range) (after training)
Arithmetic Grade Level (Wide Range) (after training)

* Altitude I.Q. is an estimate of mental efficiency closer to an individual's theoretical capacity than the full scale I.Q.

In the data presented here, forty white students and forty Negro students from the Muskegon Area Skill Training Center were examined. The Muskegon Skill Center has been very effective at training disadvantaged youth.[15] The two groups were matched only on sex, with nineteen males and twenty-one females being assigned to each group. The two groups were compared on each of twenty-one different variables (See Table I).

TABLE II

Results of the Eleven Analyses of Variance

	White	Negro
* Employment Status (before training)	1.6	1.8
** Full Scale I.Q. (before training)	96	86
** Altitude I.Q. (before training)	103	94
** Verbal I.Q. (before training)	97	89
** Performance I.Q. (before training)	95	85
* Arithmetic Grade Level (before training)	6.8	5.8
** Full Scale I.Q. (after training)	102	94
** Altitude I.Q. (after training)	111	102
** Verbal I.Q. (after training)	101	94
** Performance I.Q. (after training)	102	94
** Arithmetic Grade Level (after training)	8.7	7.2

* = Significant at .05 level of confidence
** = Significant at .01 level of confidence

[15] J. J. Austin and D. A. Sommerfeld, An Evaluation of Vocational Education For Disadvantaged Youth, U.S. Department of Health Education and Welfare, Washington, D.C., 1967.

The data in this article is taken from research sponsored by the Division of Adult and Vocational Research, U.S. Office of Education, Grant No. OE6-36-061831-0590.

Eleven of these twenty-one variable showed a significant difference between the white and Negro groups based on an analysis of variance (See Table II). On each of these eleven variables the Negroes scored as a group, significantly lower than their white counterparts. This is the point at which too many of our educational researchers (such as Shuey) stop and generalize to a difference in races. Now let us take these same data one step further. Applying the methodology of cluster analysis of individuals, these same students have been clustered based on their similarity to each other over all twenty-one variables (See Table I). The results of the cluster analysis, as presented in Table III, show a natural clustering into five racially mixed groups.

TABLE III

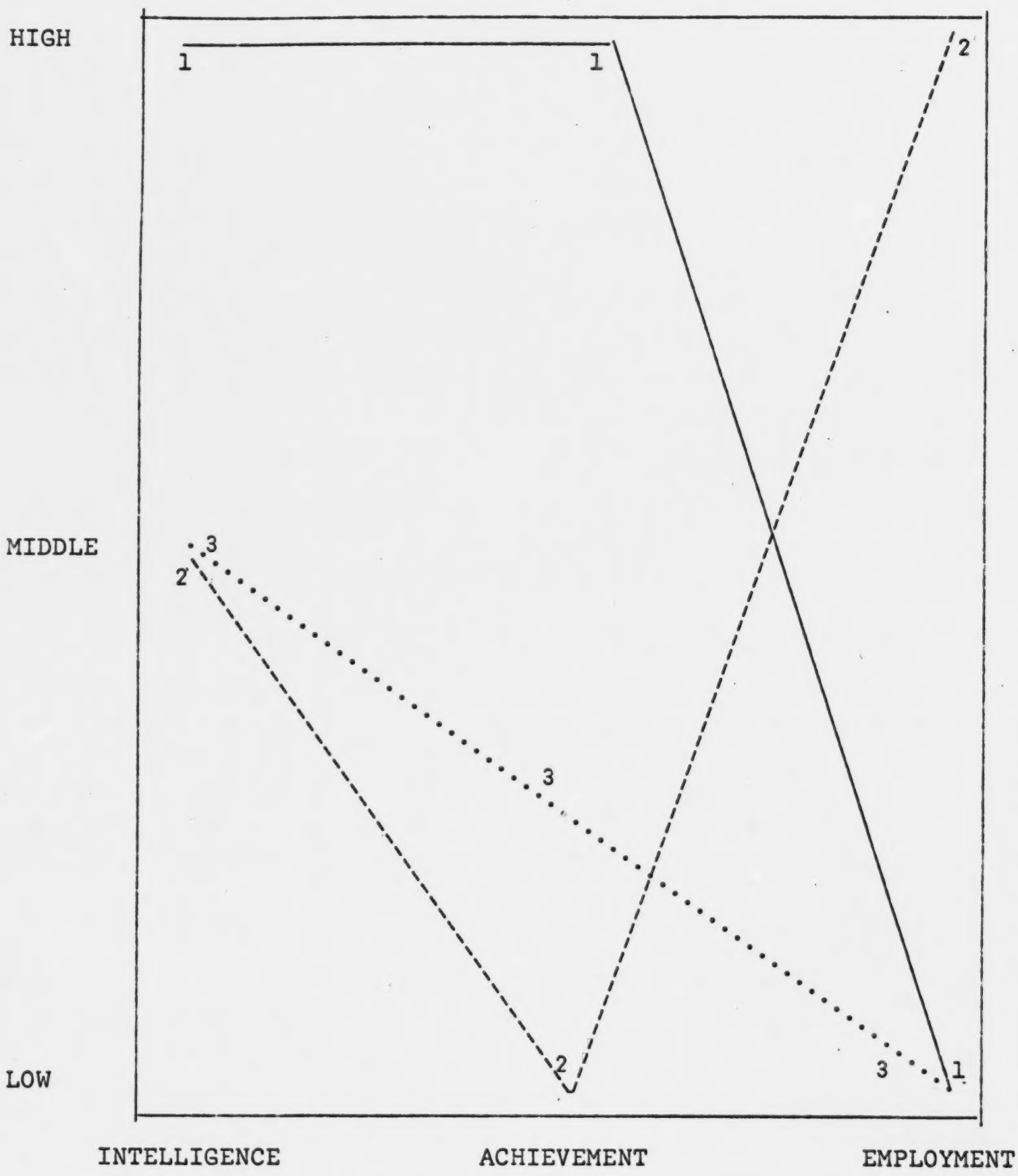
Racial Makeup of the Five Clusters

	Negro	White
1. (N = 16)	44%	56%
2. (N = 21)	29%	71%
3. (N = 32)	66%	34%
4. (N = 8)	63%	37%
5. (N = 3)	33%	67%

Despite the differences in group means, when compared individually there was no superior "white" group and no inferior "Negro" group. Figure I shows how the three larger clusters scored in the three basic areas of: intelligence, achievement, and employment. There is not one group higher on all variables and another group lower on all varibles as the group comparison of averages seem to imply. Instead, as this compromise method has shown there are three racially mixed groups or clusters with each cluster having a unique mix of intelligence, achievement, and employment.

FIGURE I

Distribution of the Three Larger Clusters



This study has attempted to show that comparisons of group averages can be misleading. As shown in Table III, individuals belonging to different races are often more similar to each other than they are to other members of their own race.

In this study an example has been presented in which subgroups or clusters of students are identified on the basis of their similarities. The results of this cluster analysis of individuals does not show the existence of superior groups of white students and does not show the existence of inferior groups of black students. The results show black and white children in every group to be more similar to each other than to members of their own race in other groups. We feel that cluster analysis is one tool that researchers in education should become more aware of and should use more often. This is just one methodological approach presented here as exploratory research. The point is that it is misleading and incorrect to use differences (even significant differences) in group means to imply consistent differences between individuals from different groups.

The purpose of this article has been to raise the issue of the use of the variable of race in regard to procedure and presentation of results. It has been suggested that, although researchers have the right to choose their variables, the use of race in a non-scholarly fashion is not only professionally inadequate but also gives rise to the use of research in ways which may be detrimental to large groups of people. Considering the currently dangerous trend toward a divided America with both a black and white society, the obligations and responsibilities of researchers have added significance. It has also been suggested that there are many ways to control for third variables and that cluster analysis might be considered by a researcher.

Researchers have a very important function. They have the opportunity and the ability to influence the future of many human beings.. Those of us who are involved in research activities do ourselves, our profession, and our country a great injustice not to recognize those obligations.

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